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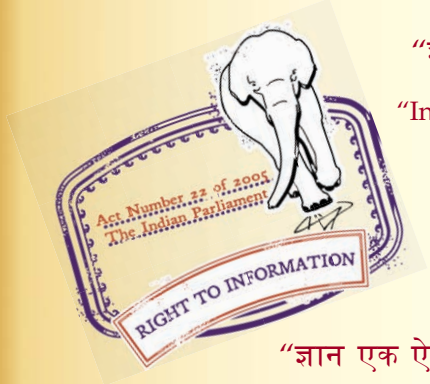
IS 12220 (1987): Ready Gulab Jamun Mix [FAD 16: Foodgrains, Starches and Ready to Eat Foods]



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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS : 12220 - 1987

(Reaffirmed 2005)

Indian Standard

SPECIFICATION FOR READY *GULAB JAMUN* MIX

[Ref : Doc : AFDC 37 (2754)]

Nutrition Sectional Committee, AFDC 37; Snack Foods and Savoury Foods Subcommittee, AFDC 37 : 4

0. Foreword — In the preparation of this standard, due consideration has been given to the Prevention of Food Adulteration Act, 1954 and the Rules framed thereunder, and the Standards of Weights and Measures (Packaged Commodities) Rules, 1977. However, the standard is subject to restrictions imposed under these, wherever applicable.

1. Scope — This standard prescribes the requirements and methods of sampling and test for ready *gulab jamun* mix.

2. Terminology — For the purpose of this standard, ready *gulab jamun* mix shall mean the mixture containing wheat flour, skimmed milk powder, refined edible oils, edible hydrogenated vegetable oils or *ghee* singly or in combination, sodium bicarbonate or other leavening agents and citric acid or tartaric acid, with or without additives like citrates, carboxymethyl cellulose (CMC), etc.

3. Ingredients

3.1 The ready *gulab jamun* mix shall be made from the following ingredients.

3.1.1 *Wheat flour (maida)/suji (semolina)* — Conforming to IS : 1009-1979 'Specification for *MAIDA* for general purposes (*second revision*)/IS : 1010-1968 'Specification for *SUJI* or *RAWA* (Semolina) (*first revision*)'.

3.1.2 *Skimmed milk powder* — Conforming to IS : 1165-1986 'Specification for milk-powder (*third revision*)'.

3.1.3 *Fat* — Refined edible oils, edible hydrogenated vegetable oils, or *ghee* singly or in combination, and containing permitted antioxidants.

3.1.4 *Sodium bicarbonate or any other leavening agent* — Food grade.

3.1.5 *Citric acid or tartaric acid* — *See* IS : 5464-1970 'Specification for citric acid, monohydrate' and IS :9504-1980 'Specification for L (+) — Tartaric acid, food grade'.

3.2 The ready *gulab jamun* mix is made by mixing wheat flour (*maida*)/*suji* (semolina), skimmed milk powder and fat with appropriate leavening agents (to produce both leavening and acidity), and permitted additives.

4. Requirements

4.1 *Description* — The ready *gulab jamun* mix shall be in the form of a white to off-white powder, free from rancidity, insect or fungus infestation and from fermented, musty or other objectionable odours. It shall also be free from any added colours. Permitted flavours may be added.

4.1.1 When tested by the method prescribed in Appendix A, the material shall be free from dirt and other extraneous matter.

4.2 *Microscopic Examination* — When subjected to microscopic examination, the material shall not reveal the presence of any foreign matter other than that specified in **3**.

4.3 The material shall be manufactured and packed in hygienic conditions [*see* IS : 2491-1972 Code for hygienic conditions for food processing units (*first revision*)].

Adopted 30 October 1987	© May 1988	Gr 3

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4.4 The ready *gulab jamun* mix shall also comply with the requirements given in Table 1.

TABLE 1 REQUIREMENTS FOR READY *GULAB JAMUN* MIX

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, *Max*	8	Appendix C of IS : 2234-1962*
ii)	Acid insoluble ash (on dry basis), percent by mass, *Max*	0·1	Appendix E of IS : 2234-1962*
iii)	Total protein (on dry basis) (N × 6·25), percent by mass, *Min*	15	Appendix F of IS : 2234-1962*
iv)	Fat (on dry basis), percent by mass, *Min*	12	Appendix B of this standard
v)	Carbohydrates, percent by mass, *Max*	60	*See* Note
vj)	Leavening index, *Min*	1·25	Appendix C of this standard
vii)	Coliform count per gram	Nil	IS : 5401-1969†
viii)	Staphylococcus count, per gram	Nil	IS : 5887 (Part 2)-1976‡

Note — The carbohydrate content shall be calculated by difference, that is, 100 — [percent of protein (on dry basis) + percent of total fat (on dry basis) + percent of total ash (on dry basis) + percent of crude fibre (on dry basis)].

*Specification for *IDLI* mix.

†Methods for detection and estimation of coliform bacteria in foodstuffs.

‡Methods for detection of bacteria responsible for food poisoning : Part 2 Isolation, identification and enumeration of *Staphylococcus aureus* and faecal streptococci (*first revision*).

5. Packing and Marking

5.1 *Packing* — The ready *gulab jamun* mix shall be packed in flexible food grade hermetically sealed pouches or in other sound moisture-proof containers.

5.1.1 The material may be packed in sizes as agreed to between the purchaser and the vendor.

5.2 *Marking* — Each container shall be suitably marked so as to give the following information :

a) Name of the material,

b) Name and address of the manufacturer,

c) Batch or code number,

d) Net mass,

e) List of ingredients used in descending order of composition,

f) Directions for use,

g) Date of manufacture,

h) Date before which the material should be used (the date to be decided by the manufacturer), and

j) Any other details required under the *Standards of Weights and Measures (Packaged Commodities) Rules*, 1977.

5.2.1 *Certification Marking* — Details available with the Bureau of Indian Standards.

6. Sampling — Representative samples of the material shall be drawn and the conformity of the material to the requirements of the specification shall be determined according to the procedure given in Appendix D.

7. Tests — Tests shall be carried out in accordance with **4.1** and **4.2** and the relevant appendices specified in col 4 of Table 1.

7.1 *Quality of Reagents* — Unless specified otherwise, pure chemicals shall be employed in tests and distilled water [*see* IS : 1070-1977 Specification for water for general laboratory use (*second revision*)] shall be used where the use of water as a reagent is intended.

Note — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

APPENDIX A

(*Clause* **4.1.1**)

DETERMINATION OF FREEDOM FROM DIRT AND EXTRANEOUS MATTER

A-1. Procedure — Take about 10 g of the material in a 250-ml beaker and add 100 ml of water. Stir the material with a glass rod to form a suspension and allow it to stand for 2 hours. Examine the supernatant water surface and the bottom of the sediment for dirt or other suspended and extraneous matter.

APPENDIX B

[*Table* 1, *Item* (iv)]

DETERMINATION OF FAT

B-1. Apparatus

B-1.1 *Soxhlet Extraction Apparatus*

B-2. Solvent

B-2.1 *Ethyl Ether, or Petroleum Ether* — distilling below 65°C.

B-3. Procedure — Transfer about 10 g of the material, accurately weighed, to a suitable thimble and extract with the solvent in a Soxhlet extraction apparatus for about 16 hours. Dry the extract contained in the Soxhlet flask, whose empty mass has previously been determined, after taring, at 95 to 100°C for 30 minutes. Cool in a desiccator and weigh. Continue drying and weighing alternately at 30-minute intervals until the loss in mass between two successive weighings is not more than one milligram. Record the lowest mass.

Note — Preserve the material in the thimble for estimation of crude fibre.

APPENDIX C

[*Table* 1, *Item* (vi)]

DETERMINATION OF LEAVENING INDEX

C-1. Procedure — Add 100 g of mix with gentle stirring, into 250-ml water in a beaker and make a uniform batter without lumps. Transfer the batter to a 500-ml measuring cylinder and note the initial volume. Note the volume after 15 minutes.

C-2. Calculation — Calculate leavening index as follows:

$$\text{Leavening index} = \frac{V}{v}$$

where

V = final volume of the batter, and

v = initial volume of the batter.

APPENDIX D

(*Clause* 6)

SAMPLING OF *GULAB JAMUN* MIX

D-1. General Requirements of Sampling

D-1.0 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

D-1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soot.

D-1.2 The sampling instrument shall be clean and dry when used.

D-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers of samples from adventitious contamination.

D-1.4 The samples shall be placed in clean and dry tin containers. The sample containers shall be of such a size that they are almost completely filled by the sample.

D-1.5 Each container shall be sealed air-tight after filling and marked with full details of sampling such as date of sampling, batch or code number, name of the manufacturer and other important particulars of the consignment.

D-1.6 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

D-1.7 Sampling shall be done by a person agreed to between the purchaser and the supplier and in the presence of the purchaser (or his representative) and the supplier (or his representative).

D-2. Scale of Sampling

D-2.1 *Lot*— In any consignment, all the containers of same size and belonging to the same batch of manufacture shall be grouped together to constitute a lot.

D-2.1.1 Samples shall be tested from each lot for ascertaining conformity of the material to the requirements of the specification.

D-2.2 The number of containers to be tested from a lot shall depend on the size of the lot and shall be in accordance with Table 2.

TABLE 2 NUMBER OF CONTAINERS TO BE SELECTED FOR SAMPLING

Lot Size	Sample Size	Sub-sample Size (for Microbiological Examination)
N	*n*	
(1)	(2)	(3)
Up to 50	3	2
51 to 100	4	2
101 to 300	5	3
301 to 500	6	3
501 to 1 000	7	4
1 001 and above	8	4

D-2.2.1 These containers shall be selected at random from the lot. In order to ensure randomness of sampling, procedures given in IS : 4905-1968 'Methods for random sampling' may be followed.

D-3. Test Samples and Referee Samples

D-3.1 Empty out the contents of the container on a sheet of paper and mix thoroughly. Take equal quantities of the material from each selected container and mix thoroughly as to form a composite sample weighing about 500 g. This composite sample shall be divided into three equal parts, one for the purchaser, another for the supplier and the third for the referee.

D-3.2 From the remaining portion of the material from each container, draw three samples each weighing not less than 100 g. These will constitute individual test samples for the container. These individual samples shall be separated into three identical sets of samples in such a way that each set has an individual test sample representing each container selected. One of these three sets shall be for the purchaser, another for the supplier and the third to be used as the referee sample.

D-3.3 From the containers selected according to col 1 and 2 of Table 2, the number of containers given in col 3 of Table 2 shall be randomly selected. Draw with a suitable sampling instrument which is sterile, the representative quantity of material under aseptic conditions to form a sample of container for microbiological examination. Divide the sample (taking care not to bring in microbiological contamination in the material) into three equal parts. Each part to obtained shall constitute a test sample representing the container and shall be transferred to sterile containers, sealed air-tight and labelled with full identification particulars given in **D-1.5**. These shall be marked, in addition, with the words 'For microbiological examination'. The samples so obtained shall be divided into three sets in such a way that each set has a sample representing each selected container. One of these sets shall be marked for the purchaser, another for the vendor and third for the referee.

D-3.4 *Referee Sample* — The referee sample shall consist of a set of individual samples (**D-3.2**), the composite sample (**D-3.1**) and a set of samples for microbiological examination marked for this purpose and shall bear the seals of the purchaser and the supplier. These shall be kept at a place agreed to between the purchaser and the supplier and shall be used in case of dispute between the two.

D-4. Number of Tests

D-4.1 Tests for determination of leavening index, acid insoluble ash, and total protein content shall be conducted on each of the individual samples constituting the set of test samples (*see* **D-3.2**).

D-4.2 Tests for the remaining characteristics, namely, freedom from dirt and extraneous matter, microscopic examination, moisture, carbohydrates and fat shall be conducted on the composite sample (*see* **D-3.1**).

D-4.3 Tests for coliform and *staphylococcus* count shall be conducted on each of the samples constituting a set of test samples, labelled with the words 'For microbiological examination'.

D-5. Criteria for Conformity

D-5.1 *For Individual Samples* — The lot shall be declared to satisfy the requirements of leavening index, acid insoluble ash and total protein content, if each of the test results satisfies the corresponding requirements given in Table 1.

D-5.2 *For Composite Samples* — The test results on the composite samples shall meet the corresponding requirements specified in **4.1**, **4.2** and Table 1.

D-5.3 *For Samples for Microbiological Examination* — The test results on the sample for microbiological examination shall meet the corresponding requirements specified in Table 1.

EXPLANATORY NOTE

Gulab jamun is traditionally made by adding the required quantity of *maida* and/or *suji* to *khoya* and kneading vigorously till a soft dough is formed. This is made into small round or oblong shaped balls without cracks which are deep fried and then soaked in sugar syrup.

The process of making *gulab jamun* using the ready mix involves adding the appropriate quantity of water to the mix and gently mixing into a dough and thereafter following the same procedure as for the traditional method.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Printed at Swatantra Bharat Press, Delhi, India